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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

FEDERAL TRADE COMMISSION,
Plaintiff

v.

MICROSOFT CORPORATION, et al.,
Defendants

Case No. 23-cv-02880-JSC

DECLARATION OF DENNIS W. CARLTON

JUNE 26, 2023

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1. I am the David McDaniel Keller Professor of Economics Emeritus at the Booth School of Business of the University of Chicago. I received my A.B. in Applied Mathematics and Economics from Harvard University and my M.S. in Operations Research and Ph.D. in Economics from the Massachusetts Institute of Technology. I have served on the faculties of the Law School and the Department of Economics at the University of Chicago and the Department of Economics at the Massachusetts Institute of Technology.

2. I specialize in microeconomics and specifically in the economics of industrial organization. I am co-author of the book *Modern Industrial Organization*, a leading text in the field of industrial organization, and I also have published approximately 150 articles in academic journals and books. In addition, I serve as Co-Editor of the *Journal of Law and Economics*, a leading journal that publishes research applying economic analysis to industrial organization and legal matters; serve on the Editorial Board of *Competition Policy International*, a journal devoted to competition policy; and serve on the Advisory Board of the *Journal of Competition Law and Economics*. I have also served as an Associate Editor of the *International Journal of Industrial Organization and Regional Science and Urban Studies*, and on the Editorial Board of *Intellectual Property Fraud Reporter*. I was the 2014 Distinguished Fellow of the Industrial Organization Society.

3. In addition to my academic experience, I served as Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice from October 2006 through January 2008. My responsibilities included supervising approximately 50 Ph.D. economists, helping formulate antitrust policy toward ongoing proposed mergers, analyzing general antitrust policies both horizontal and vertical, and communicating such policies to foreign and domestic agencies, as well as to practitioners. I also served as a Commissioner of the Antitrust Modernization Commission, created by Congress to evaluate U.S. antitrust laws. I have served as a consultant to the Department of Justice and Federal Trade Commission on the Horizontal Merger Guidelines, as a general consultant to the Department of Justice and Federal Trade Commission on antitrust matters, as a member of the American Bar Association Advisory Committee that advises the incoming President on antitrust policy, and as an advisor to the Bureau of the Census on the collection and interpretation of economic data. I also helped create and teach in a program sponsored by the Federal Judicial Center to train judges on antitrust matters.

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4. I also am a Senior Managing Director of Compass Lexecon, a consulting firm that specializes in the application of economics to legal and regulatory issues and for which I served as President (of Lexecon) for several years. I have provided expert testimony before various U.S. state and federal courts, the U.S. Congress, a variety of state and federal regulatory agencies and foreign tribunals.

5. My curriculum vitae, which includes a list of my testifying experience in the last four years, is attached as Appendix A to this report. Compass Lexecon bills for my time on this matter at my customary hourly rate, which is currently \$2,000 per hour. Neither my compensation nor that of Compass Lexecon is dependent on the outcome of this proceeding.

6. I have been asked by Counsel for Microsoft and Activision to analyze the FTC's claims, with a focus on the opinions of their economic expert, Prof. Robin Lee,¹ concerning potential adverse competitive effects and lack of procompetitive efficiencies arising from Microsoft's proposed acquisition of Activision. The FTC claims that, after Microsoft's acquisition of Activision (the "Proposed Transaction"), "Microsoft would have the ability and increased incentive to withhold or degrade Activision's content in ways that substantially lessen competition—including competition on product quality, price, and innovation. This loss of competition would likely result in significant harm to consumers in multiple markets at a pivotal time for the industry."² [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹ Expert Report of Robin S. Lee, Ph.D., May 5, 2023 ("Lee Report"); Expert Reply Report of Robin S. Lee, Ph.D., June 9, 2023 ("Lee Reply Report"); and Direct Testimony of Robin S. Lee, Ph.D. June 25, 2023 ("Lee Direct Testimony"). I understand there is a dispute about whether Dr. Lee's reports are admissible. I take no position on that matter but occasionally address points raised in his report to the extent they are admitted.

² Complaint, *In the Matter of Microsoft Corp. and Activision Blizzard, Inc.*, Docket No. 9412, December 8, 2022, ¶ 1.

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[REDACTED]

7. I submitted an expert report on these issues in the Federal Trade Commission's administrative court proceeding challenging the Microsoft-Activision merger.³

8. My main conclusions are as follows:

- Prof. Lee's opinion that the proposed merger will lead to competitive harm is peculiar given the competitive conditions in the industry. [REDACTED]

[REDACTED]

Microsoft expects that the proposed transaction with Activision will allow it to achieve merger-specific efficiencies that will enable it to compete better against its larger rival, Sony. Normally, this would be seen as a procompetitive outcome, but in Prof. Lee's opinion, [REDACTED]

- Vertical mergers raise different issues than horizontal mergers. A horizontal merger eliminates competition among firms that produce substitutes. This automatically generates upward pricing pressure as competition is reduced. In contrast, a vertical merger, such as this one, involves combining complements, not substitutes, and does not reduce the number of competing firms. Vertical mergers automatically generate downward pricing pressure, and are typically procompetitive as a result. This does not

³ Expert Report of Dennis W. Carlton, May 23, 2023 ("Carlton Report").

⁴ For the purposes of my report, I use Prof. Lee's market definitions, though I do not necessarily agree with them. I understand that another expert is addressing Prof. Lee's market definitions and whether they are valid.

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mean that vertical mergers are always desirable. In some limited cases, vertical mergers can generate incentives to raise rivals' costs or otherwise harm rivals, and competition can suffer. Vertical mergers, like horizontal mergers, can also generate other benefits by, for example, allowing the production of or expansion of new products such as Game Pass. Any possibility of harms from a vertical merger must be balanced against the possible benefits of a vertical merger. In the proposed Microsoft-Activision merger, there is a demonstrable benefit from the merger: *Call of Duty* will be made available on some platforms it is not currently available on (specifically, Nintendo and five cloud streaming providers, including Nvidia) and will be more widely available on Xbox through its inclusion in Game Pass. [REDACTED]

- [REDACTED]
- Prof. Lee first generates a demand model, or as he calls it a share model [REDACTED]
- [REDACTED]

[REDACTED]

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[REDACTED]

- Prof. Lee makes other questionable assumptions in his foreclosure model—

[REDACTED]

- Prof. Lee's claims of [REDACTED] are inconsistent with economic realities of the industry. Multiplayer games, like *Call of Duty* in particular, benefit from network effects, which means that as more users play them, the value of the game increases to everyone. This increases the incentive to distribute such a game widely, on many platforms, and would raise the costs of making a game exclusive. [REDACTED]

[REDACTED] Aligned with the theory that multiplayer games benefit from wide distribution, I understand that no established multi-player, multi-platform games with cross-play (which allows players on different platforms to play with one another) have been taken exclusive. In addition, Microsoft has signed contracts with Nintendo and cloud gaming providers and made an offer to Sony to make *Call of Duty* available on PlayStation. [REDACTED]

[REDACTED]

- [REDACTED]

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[REDACTED]

Indeed, to evaluate any partial foreclosure strategy, Prof. Lee would need to (i) specify the particular partial foreclosure strategy; (ii) assess the cost to Xbox to implement that strategy and the expected gain as a result; and (iii) evaluate the effect of that strategy on PlayStation and competition more generally. [REDACTED]

[REDACTED]

- [REDACTED]

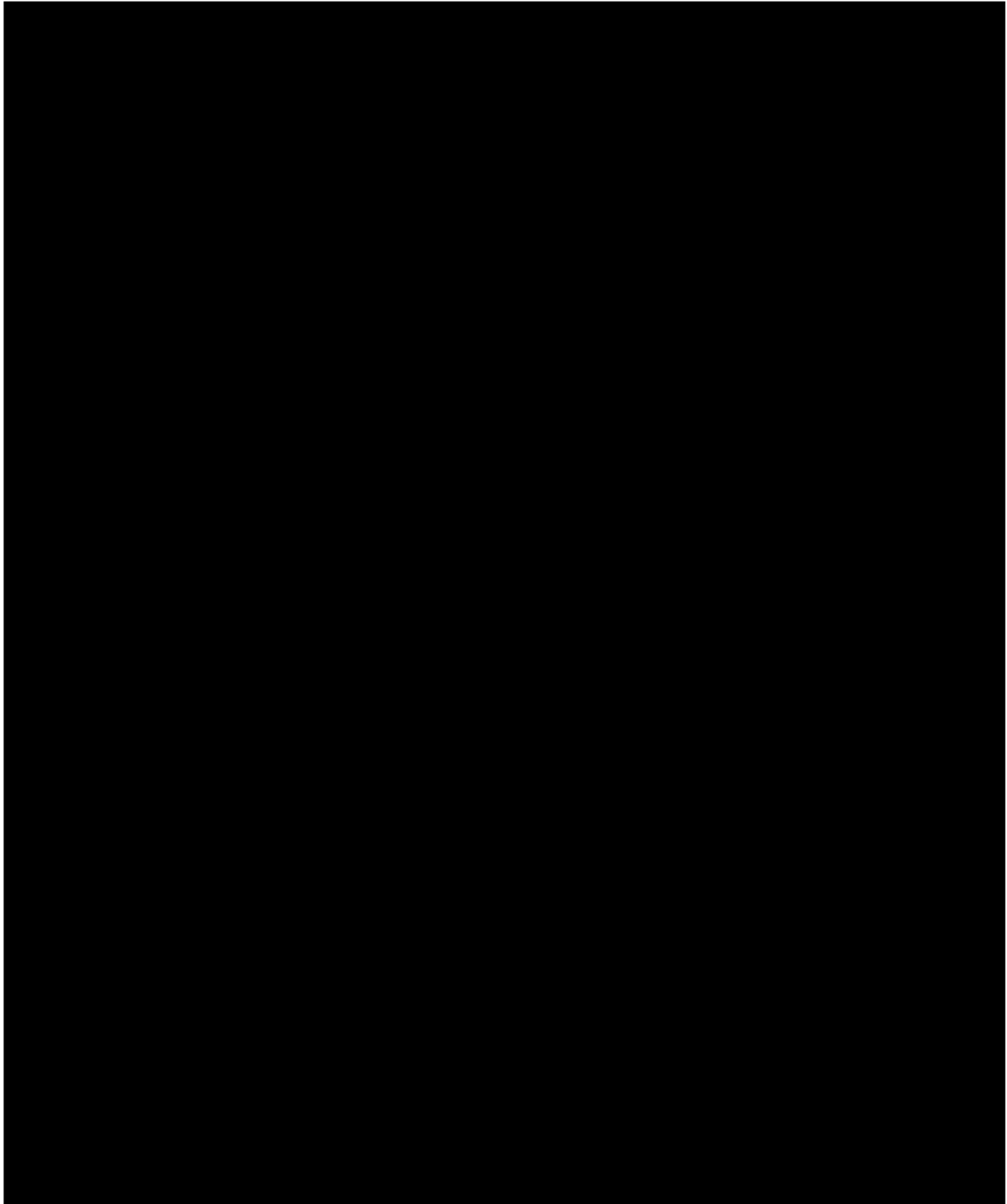
- [REDACTED]. This ignores well-accepted economic principles, [REDACTED], establishing that vertical mergers can generate benefits. Prof. Lee's claim that [REDACTED]

- Even though there will not be exclusivity for *Call of Duty*, that does not mean that it is appropriate to condemn all exclusivity in this industry. Sony and Nintendo—to a greater extent than Microsoft—use exclusivity to promote sales of their consoles. Exclusivity can, under certain circumstances, be procompetitive by creating greater incentives to create and promote a product.

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- [REDACTED]

9. Prof. Lee's analysis of foreclosure and my critiques of it are detailed and sometimes complicated. But the essence of my critique can be stated simply, as shown in Figure 1.



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I. VERTICAL MERGERS GENERATE BENEFITS.

10. The proposed Microsoft-Activision merger is a vertical merger, not a horizontal one. A horizontal merger eliminates a rival and creates upward pricing pressure due to the loss of that rival. In contrast, a vertical merger does not eliminate a rival and creates downward pricing pressure, which as a general matter benefits consumers. Both types of mergers can have additional benefits and harms.

11. A vertical merger combines firms with complementary assets, does not involve the elimination of a competitor to either the upstream or downstream merging firm, and generates well-recognized, procompetitive effects that must be considered in any attempt to determine the net effect of the merger on competition and consumer welfare.⁶ These vertical merger benefits arise from the alignment of investment incentives or business strategies of the merging firms, the internalization of pricing externalities, and the reduction of transaction costs between the merging firms.

12. In limited circumstances a vertical merger can harm competition, but a complete analysis would need to show that the harms exceed the benefits. In analyzing the effect of a vertical merger on competition, the analyst must account for the procompetitive effects as well as any incentives to harm rivals in order to figure out the net effect of any vertical transaction. If the analyst ignores the benefits, he can only find harms. Without a demonstration that harms of a vertical merger exceed the benefits, one risks preventing procompetitive mergers that would enhance efficiency and improve consumer welfare.

⁶ The procompetitive effects of a vertical merger are well recognized, including in Prof. Lee's own academic publications. See, e.g., Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, Pearson, 2005, Chapter 12; Dennis W. Carlton (2020), "Transaction Costs and Competition Policy," *International Journal of Industrial Organization*, 73:1-14; Dennis W. Carlton, Georgi V. Giezov, Mark A. Israel, and Allan L. Shampine (2022), "A Retrospective Analysis of the AT&T/Time Warner Merger," *Journal of Law and Economics*, 65(S2); Gregory S. Crawford, Robin S. Lee, Michael D. Whinston, and Ali Yurukoglu (2018), "The Welfare Effects of Vertical Integration in Multichannel Television Markets," *Econometrica*, 86(3): 891-954; Ronald H. Coase (1937), "The Nature of the Firm," *Econometrica*, 4(16): 386-405; Oliver E. Williamson (1971), "The vertical integration of production: market failure considerations," *American Economic Review*, 61(2): 112-123; Bengt Holmström and John Roberts (1998), "The boundaries of the firm revisited," *Journal of Economic Perspectives*, 12(4):73-94.

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13. One of the benefits from this transaction is that Microsoft will expand the distribution of *Call of Duty* by putting it on Game Pass and making it available to cloud gaming services. [REDACTED]

[REDACTED] This view is contrary to Activision's business strategy and the available evidence.

14. Microsoft has also signed an agreement to develop *Call of Duty* for Nintendo. Because *Call of Duty* is not offered on the Nintendo Switch today and no *Call of Duty* titles have been released on a Nintendo console since 2013, this represents an expansion of access to *Call of Duty*. The Microsoft-Nintendo agreement commits Microsoft to developing the game for Nintendo consoles, something Activision had been unwilling to do. That means that this agreement creates a merger-specific benefit.

15. **Content Library Subscription Services.** Activision's strategy is not to make its current content available on content library subscription services for a variety of reasons including that, as a game developer, Activision believes participating in content library subscription services would erode its business model, including by resulting in substantial cannibalization of its single game sales of *Call of Duty*.⁷ Microsoft has tried, and failed, to persuade Activision to put its content onto Game Pass.⁸ And Play Station's CEO, Jim Ryan, testified that Sony did not even

⁷ Zerza IH Tr., p. 330:3-6 [REDACTED]

[REDACTED] This is also understood by Sony. See, e.g., Ryan 4/6/23 Depo. Tr., p. 258:20–25 (“Q You have no reason to believe that Mr. Kotick and Activision would put *Call of Duty* on a subscription service like Game Pass for any length of time or day and date if this transaction is not completed, right? A Correct.”)

⁸ [REDACTED]

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broaden the idea of putting new *Call of Duty* titles on PlayStation Plus because he did not think Mr. Kotick would consider doing so.⁹

16. Given Activision's consistent business strategy and its view of the economics of putting its content into content library subscription services, the only reasonable assumption about Activision's behavior in the absence of the merger is that it would continue to withhold its current content from content library subscription providers. By contrast, the evidence shows that Microsoft will put *Call of Duty* into Game Pass after the acquisition, which will make the game available to more consumers.¹⁰

17. **Cloud Providers.** Activision's consistent business strategy and analysis has been that cloud gaming services do not facilitate a high-quality user experience for games like *Call of Duty*, and that it would not be worthwhile to invest its limited resources in developing games for cloud services that would have only speculative potential.¹¹ Activision does not make its games commercially available on any cloud gaming service provider,¹² and Mr. Kotick has explained that he and other Activision executives will not put Activision content on cloud services.¹³ [REDACTED]

[REDACTED]

[REDACTED]

⁹ Ryan 4/6/23 Depo. Tr., p. 267:18-25.

¹⁰ Microsoft has a policy of putting all of its first-party games on Xbox Game Pass on the game's launch date. "[A]ll new games published by Microsoft Studios, including Xbox exclusive games, are made available in Game Pass on the same day and date as they are released to purchase. This is a commitment Microsoft made in January 2018 to expand its Game Pass offering and allows subscribers to play new releases of first-party games such as Forza, Halo, and Sea of Thieves on their day of release." (Microsoft Response to FTC Second Request, p. 132.); Xbox Wire, "Xbox Game Pass Expands to Include New Releases from Microsoft Studios," January 23, 2018, available at: <https://news.xbox.com/en-us/2018/01/23/xbox-game-pass-expands/>.

¹¹ Kotick IH Tr., pp. 151:11-14, 153. See also Kotick Depo Tr., pp. 154:7-11, 157:1-25.

¹² [REDACTED]

¹³ Kotick IH Tr., pp. 151:11-14. See also Kotick Depo Tr., pp. 154:7-11, 157:1-25 [REDACTED]

[REDACTED]

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18. Given Activision's consistent business strategy and its judgment that cloud gaming services do not facilitate a high-quality user experience for games like *Call of Duty*, the only reasonable assumption about Activision's behavior in the absence of the merger is that it would continue to withhold its *Call of Duty* content from cloud gaming services. By contrast, Microsoft's contractual commitments to cloud gaming services providers would make Activision's content more broadly available to consumers than it would be in the absence of the proposed merger.

19. As in the case of subscription, Prof. Lee suggests that [REDACTED]
[REDACTED] The contracts signed by Microsoft prove this to be false.

20. **Investment incentives.** The combined company will have an increased incentive to invest in developing new games or franchises or improving existing games or franchises compared to an independent Activision. This is because the combined company will capture more of the incremental profits from these investments than Activision does as an independent game developer. Moreover, because adding *Call of Duty* to Game Pass will result in an increase in the number of Game Pass users, that gives Microsoft more incentive to invest in other games, not just Activision games. This alignment of incentives between Microsoft and Activision has not been and likely cannot be achieved by contract. In the presence of contracting costs, uncertainty, and asymmetric information, contracts cannot necessarily produce the equivalent of what an integrated firm can achieve.¹⁴ Thus, the merger can be expected to increase incentives to invest in game development compared to a world without the merger.

21. In summary, this vertical merger creates benefits that cannot be ignored when assessing whether it is procompetitive or anticompetitive. Microsoft plans to make *Call of Duty* available on Game Pass (including on Game Pass Ultimate, which involves a cloud streaming feature) and has already signed contracts with Nintendo and cloud providers, both of which will make *Call of Duty* more broadly available than it would be in the absence of the merger. The merger will also improve incentives to invest in game development. [REDACTED]

¹⁴ Ronald H. Coase (1937), "The Nature of the Firm," *Econometrica*, 4(16): 386-405; Oliver E. Williamson (1971), "The vertical integration of production: market failure considerations," *American Economic Review*, 61(2): 112-123; Bengt Holmström and John Roberts (1998), "The boundaries of the firm revisited," *Journal of Economic Perspectives*, 12(4):73-94.

II. PROF. LEE'S CONCLUSION THAT [REDACTED] WOULD OCCUR IS INCORRECT

16

Microsoft's internal analysis of the financial implications of the

16 I note that my conclusion of no foreclosure is consistent with the findings of the UK Competition & Markets Authority and the European Commission, both of which concluded that Microsoft would not have an incentive to withhold Activision content from PlayStation. CMA, Anticipated acquisition by Microsoft of Activision Blizzard, Inc. - Final report”, April 26, 2023, available at: https://assets.publishing.service.gov.uk/media/644939aa529eda000c3b0525/Microsoft_Activision_Final_Report_.pdf, ¶¶ 55-56; European Commission press release, “Mergers: Commission clears acquisition of Activision Blizzard by Microsoft, subject to conditions,” May 15, 2023, available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2705.

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merger does not postulate any foreclosure.¹⁷ Indeed, Microsoft has offered Sony a contract to prevent foreclosure of *Call of Duty* (though Sony has refused it). The trial testimony also supports the view that Microsoft will not withhold *Call of Duty* from Sony.¹⁸ [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED] Microsoft has not made exclusive any established multiplayer, multi-platform game with cross-play. For example, it did not make Minecraft exclusive after it purchased it.

24. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

25. [REDACTED]
[REDACTED]
[REDACTED]¹⁹ Because of those inconsistencies, I label these assumptions “errors.” [REDACTED]
[REDACTED]

26. [REDACTED]
[REDACTED]

¹⁷ The financial model that Microsoft used to analyze the proposed transaction (the “Deal Model”). PX1217-MSFT-2R-08912251.

¹⁸ Trial testimony of Phil Spencer, in this matter, June 23, 2023, pp. 367-368.

¹⁹ [REDACTED]

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27. [REDACTED]

28. I used Prof. Lee's own model and data to show that the shares of non-exclusive games, and specifically *Call of Duty*, are not the same (as Prof. Lee assumes), but rather are different across consoles. For example, the share of consumers who purchased *Call of Duty: Ghosts* can vary from console to console and can show differences as large as [REDACTED], as was the case in December 2013 when its share was [REDACTED]% on Xbox, compared to [REDACTED]% on PlayStation

4. [REDACTED]

²⁰ Lee Report, ¶ 730.

²¹ [REDACTED]

²² In his 2013 paper estimating a model of consumer demand for gaming consoles and software, Prof. Lee does not appear to impose the assumption that non-exclusive games have identical value on different consoles. (Robin S. Lee, (2013), "Vertical Integration and Exclusivity in Platform and Two-Sided Markets," *American Economic Review*, 103(7): 2960-3000.)

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29. [REDACTED]

30. Prof. Lee's approach is not sound as a matter of economics. If a model generates what Prof. Lee admits are nonsensical results, that is a sign the model is unreliable. In such an instance, the solution is not to constrain the model to force a more sensible outcome, but to reformulate the model such that the unconstrained model gives a sensible result. This is especially true when, as here, the constraint simply replicates the original flawed model.

31. [REDACTED]

32. [REDACTED]

²³ Lee Reply Report, note 192.

²⁴ Lee Reply Report, ¶ 156.

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It is the change in Xbox sales, not the change in Xbox's share of Xbox plus PlayStation sales, that matters to an analysis of foreclosure.²⁵

33.

26

34.

_____, consider the extreme example where diversion to the outside good is 100%, that is, every consumer who chooses not to purchase a PlayStation 4 due to *Call of Duty* being unavailable chooses not to purchase an Xbox One.

25

26

See Robin S. Lee, (2013), “Vertical Integration and Exclusivity in Platform and Two-Sided Markets,” *American Economic Review*, 103(7): p. 2986 (“Most consumers opt to consume the outside good rather than purchase another console following a price increase.”)

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Clearly, in this scenario, one should predict no increase in the number of Xbox Ones sold.

[REDACTED]

35. [REDACTED]

36. [REDACTED]

37. [REDACTED]

38. [REDACTED]

27 [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²⁹ Lee Direct Testimony, ¶ 106.

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[REDACTED]

42. [REDACTED]

43. [REDACTED]

44. [REDACTED]

45. [REDACTED]

³⁰ I leave it to the fact finder the interpretation of any ambiguity in documents.

³¹ Lee Direct Testimony, ¶ 106. I note that Prof. Lee's foreclosure model analyzes global sales, so only the global estimate is relevant.

³² [REDACTED]

³³ Lee Reply Report, ¶ 210.

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[REDACTED]

34 Telemetry data indicates that, during July 2021–June 2022, [REDACTED] of PlayStation COD gamers played COD for fewer than 10 hours per year and spent less than \$100.

35 CMA Addendum to Provisional Findings, ¶ 4.11
([https://assets.publishing.service.gov.uk/media/641d6b7e32a8e0000cfa9381/Updated version - Microsoft Activision Addendum PFs For Publication 230324 .pdf](https://assets.publishing.service.gov.uk/media/641d6b7e32a8e0000cfa9381/Updated_version_-_Microsoft_Activision_Addendum_PFs_For_Publication_230324_.pdf)).

36 [REDACTED]

37 Furthermore the CMA survey analyzes a different question than does Prof. Lee’s foreclosure model.

[REDACTED] In contrast, the [REDACTED]

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[REDACTED]

[REDACTED]³⁸

46. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

47. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

48. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁸ [REDACTED]

³⁹ Lee Direct Testimony, ¶ 108.

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49.

Suppose, for example, that *Call of Duty 2025* were to be foreclosed from PlayStation and, as a result, a user purchases an Xbox to play *Call of Duty 2025* and switches to using Xbox as his primary gaming device. That user will no longer purchase future *Call of Duty* releases on PlayStation, even though he may have purchased future COD releases on PlayStation absent the foreclosure of *Call of Duty 2025*.

Question	Percentage of 'Yes' Responses
1. Are you a member of a religious organization?	100%
2. Do you believe in God?	100%
3. Do you believe in the Bible?	100%
4. Do you believe in the teachings of Jesus?	100%
5. Do you believe in the teachings of the Church?	100%
6. Do you believe in the teachings of the Pope?	100%
7. Do you believe in the teachings of the Holy Spirit?	100%
8. Do you believe in the teachings of the Virgin Mary?	100%
9. Do you believe in the teachings of the Saints?	100%
10. Do you believe in the teachings of the Angels?	100%
11. Do you believe in the teachings of the Holy Trinity?	100%

50.

50. [REDACTED]

40

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51. [REDACTED]
[REDACTED]
[REDACTED] For example, imagine two gamers. Gamer A plays 100 hours of *Call of Duty* and four hours of PlayStation exclusives; Gamer B plays 100 hours of *Call of Duty* and 400 hours of PlayStation exclusives. It is to be expected that Gamer A would be more likely to buy an Xbox in the event of foreclosure, or at least more likely to single-home on Xbox post-foreclosure. [REDACTED]

52. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

53. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] As an economic matter, that behavior is an indication that Sony is more concerned about preventing Xbox from becoming a more potent

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competitor (or using the regulatory review process to extract even more favorable terms for the distribution of Activision content) than it is with the possible loss of access to *Call of Duty*.

54. [REDACTED]

III. PROF. LEE PROVIDES NO ANALYSIS OF [REDACTED]

55. [REDACTED]

56. [REDACTED]

[REDACTED] The latter cannot be inferred from the former. Microsoft's gains and losses from partial foreclosure would differ from those that result from total foreclosure. To properly assess Microsoft's incentives to partially foreclose, Prof. Lee would need to identify the specific partial foreclosure strategy and assess the financial costs and benefits that Microsoft would expect to realize as a result of that strategy. This would require putting forward a new model that assessed those incentives— [REDACTED]

⁴¹ Lee Direct Testimony, ¶ 114.

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[REDACTED]

57. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

IV. PROF. LEE DOES NOT EVALUATE WHETHER THE TRANSACTION WOULD HARM CONSUMERS BECAUSE HE DOES NOT ACCOUNT FOR

[REDACTED]

58. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁴³ As I explain above, there are benefits unique to this acquisition, such as the inclusion of Activision content in Game Pass, that will not be realized absent the merger. These efficiencies benefit consumers, either through a reduction in the price that consumers pay or an increase in the quality of the products they purchase. A meaningful analysis of the effects of this acquisition on consumer welfare must weigh both the harms and benefits. To ignore the pro-consumer effects of a transaction while giving full weight to its hypothetical harms is tantamount to assuming that the transaction will harm consumers.⁴⁴

⁴² Lee Direct Testimony, ¶ 116.

⁴³ See literature cited in note 6, above.

⁴⁴ Even if Prof. Lee had established that Microsoft had the incentive to engage in partial foreclosure (he did not) and had properly weighed the harms and benefits that will result from the transaction (he did not), his Harm model would still be incapable of establishing whether the transaction would harm consumers. Much like his foreclosure model, Prof. Lee's Harm model is dependent on a number of unsupported assumptions. Specifically, the extent to which consumers are harmed in his model depend on an assumed value of the shift in console shares, from which he infers the

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59. [REDACTED]

[REDACTED] In response to such a strategy, Sony could, for example, attempt to make its subscription service more appealing to consumers in order to better compete with Microsoft's Game Pass after it adds Activision content; or it could increase its investment in first-party exclusives to make its platform more desirable by gamers. These responses would not only reduce the harm to Sony from Microsoft's foreclosure strategy, but also reduce Microsoft's incentive to engage in such a strategy in the first place and provide benefit to consumers that would offset the potential harms from foreclosure. [REDACTED]

[REDACTED]

[REDACTED]

* * *

I conclude that Prof. Lee has failed to demonstrate that this transaction will cause harm to competition or consumers, either through partial or total foreclosure of *Call of Duty* or other Activision content.



June 26, 2023

Dennis W. Carlton

Date

extent to which the quality of the PlayStation would be reduced; and the value of the nesting parameter, σ , which governs the extent to which consumers substitute to the outside good, rather than the Xbox, when the quality of the PlayStation is reduced. Prof. Lee has no estimate of the value of the nesting parameter or a model that informs what share shift would occur in the event of partial foreclosure.

Appendix A: Curriculum Vitae and Testimony

DENNIS WILLIAM CARLTON

June 2023

Senior Managing Director

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Email Address: dcarlton@compasslexecon.com

EDUCATION

Ph.D., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Economics, 1975.

M.S., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Operations Research, 1974.

A.B., HARVARD UNIVERSITY (Summa cum laude): Applied Math and Economics, 1972.

EMPLOYMENT

COMPASS LEXECON (formerly Lexecon), (2008 – present) Senior Managing Director; LEXECON INC., (1977 – 2006), President 1997 – 2001, Senior Managing Director 2003 - 2006

UNIVERSITY OF CHICAGO, Booth School of Business, David McDaniel Keller Professor of Economics (2011 – July 2022; Emeritus July 2022- present); Katherine Dusak Miller Professor of Economics (2008 – 2011); Professor of Economics (1984 – 2008); Law School, Professor of Economics (1980 – 1984); Department of Economics, Assistant Professor (1976 – 1979); Associate Professor (1979)

U.S. DEPARTMENT OF JUSTICE, Washington, District of Columbia (2006 – 2008) Deputy Assistant Attorney General for Economic Analysis, Antitrust Division

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts, Department of Economics (1975 – 1976) Instructor in Economics

OTHER PROFESSIONAL EXPERIENCE

HARVARD UNIVERSITY, Public Policy Summer Course in Economics (1977), Professor

BELL TELEPHONE LABORATORIES (Summers 1976, 1977)

JOINT CENTER FOR URBAN STUDIES OF M.I.T. AND HARVARD UNIVERSITY, Cambridge, Massachusetts (1974 - 1975)

CHARLES RIVER ASSOCIATES, Cambridge, Massachusetts (Summers 1971, 1972) Research Assistant

FIELDS OF SPECIALIZATION

Theoretical and Applied Microeconomics
Industrial Organization

ACADEMIC HONORS AND FELLOWSHIPS

Keynote Address, 32nd Annual Workshop of the Competition Law & Policy Institute of New Zealand, 2021
2020 Award for Best Article in *Economic Inquiry* for the article "Antitrust Treatment of Nonprofits: Should Hospitals Receive Special Care? (with C. Capps and G. David)".
Best Academic Economics Article in Antitrust - 2019 Antitrust Writing Awards, given by Concurrences and George Washington University Law School for the article "Vertical Most-Favored-Nation Restraints and Credit Card No-Surcharge Rules" (with R. Winter) in *The Journal of Law and Economics*.
Harris Professor Lecture, Clemson University, 2019
Taft Lecture, New York Bar Association, 2018
Keynote Address, CRESSE Conference, June 2018
Best Academic Economics Article in Antitrust - 2016 Antitrust Writing Awards, given by Concurrences and George Washington University Law School for the article "Rethinking Antitrust in the Presence of Transaction Costs: Coasian Implications" (with B. Keating) in *Review of Industrial Organization*.
Keynote Address, Federal Trade Commission, Auto Distribution: Current Issues and Future Trends, January 19, 2016
Award for Antitrust Litigation Consultants of the Year 2015, awarded by Corporate Vision
Keynote Address, International Industrial Organization Conference, 2014
The 2014 Distinguished Fellow, Industrial Organization Society
Economist of the Year, Global Competition Review, 2014
Keynote Address, Sixth Annual Federal Trade Commission Microeconomics Conference, 2013
Heath Memorial Lecture, University of Florida, 2013
Award (w. Mark Israel) for Best Antitrust Analysis in Litigated Cases, Global Competition Review, 2013
Keynote Address, 21st Annual Workshop of the Competition Law & Policy Institute of New Zealand, 2010
Keynote Address, Japanese Symposium on Competition, sponsored by Japan Fair Trade Commission, 2009
Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the Industrial Organization Society for Best Paper in Antitrust Economics, 2008
Keynote Address to Israel Antitrust Conference, 2008
Lewis Bernstein Memorial Antitrust Lecture, Washington, D.C., 2006
Distinguished Visitor, University of Melbourne, April 2005
Milton Handler Lecture, New York, 2004
Keynote Address to the International Competition Network, Mexico, 2004
Alexander Brody Distinguished Lecture, Yeshiva University, 2000
Ph.D. Thesis chosen to appear in the Garland Series of Outstanding Dissertations in Economics
Recipient of the 1977 P.W.S. Andrews Memorial Prize Essay, best essay in the field of Industrial Organization by a scholar under the age of thirty
National Science Foundation Grant, 1977 - 1985
Recipient of Post-doctoral Grant from the Lincoln Foundation, 1975
National Science Foundation Fellowship, 1972 - 1975
Phi Beta Kappa, 1971
John Harvard Award, 1970
Detur Book Prize, 1969
Edwards Whitaker Award, 1969
M.I.T., National Scholar Award, 1968

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Appointed to ABA Leadership in Antitrust Section: 2018-2019
Participant in the FTC Competition and Consumer Protection Hearings: "The State of U.S. Antitrust Law", September 21, 2018 (Session 1) and "Merger Retrospective Hearing", April 12, 2019
Co-Organizer and Instructor, Antitrust Law and Economics Institute, Federal Judicial Center, 2017, 2018, 2023
Member, Task Force on International Divergence in Dominance Standards, American Bar Association 2017 - 2018
Board Member, The Taub Center for Social Policy Studies, 2017 - present
Member, U.S. Chamber of Commerce International Competition Policy Expert Group for report on International Trade and Competition, 2017
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2016
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2012
Advisory panel to the Department of Justice and the FTC on the merger guidelines, 2010
Co-editor, The Journal of Law and Economics, 1980 - present
Visiting Committee, MIT, Department of Economics, 1995 - 2011
Member, Advisory Board, Economics Research Network, 1996 - present
Member, Advisory Board of Antitrust and Regulation Abstracts, Social Science Research Network, 1998 - present
Advisory Board, Massachusetts Institute of Technology, Department of Economics, 1999
Editorial Board, Competition Policy International (CPI), 2010 - present, Co-Editor, Competition Policy International (CPI), 2004 - 2009
Member, Economic Task Force - Antitrust Division, American Bar Association, 2010
Advisory Board, Journal of Competition Law and Economics, 2004 - present
Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice, 2006 - 2008
Presidential Appointment to the Antitrust Modernization Commission, 2004 - 2007
Invited Panelist at Public Hearing on the Retail Banking Sector Inquiry: Payment Cards, before the European Commission in Brussels, Belgium, July 17, 2006.
Consultant on Merger Guidelines to the FTC, 2003
Professor, George Mason Institute for Judges, October 2001
Chairman, FTC Round Table on Empirical Industrial Organization (September 11, 2001)
Participant in the Round Table on the Economics of Mergers Between Large ILECS before the Federal Communications Commission, February 5, 1999
Member, Steering Committee, Social Science Research Council, Program in Applied Economics, 1997 - 1999
Participant in roundtable discussions on "The Role of Classical Market Power in Joint Venture Analysis," before the Federal Trade Commission, November 19, 1997 and March 17, 1998.
Participant in meetings with Committee of the Federal Reserve on Payment Systems, June 5, 1997
Associate Editor, Regional Science and Urban Economics, 1987 - 1997
Resident Scholar, Board of Governors of the Federal Reserve System, Summer, 1995
Accreditation Committee, Graduate School of Business, Stanford University, 1995
Associate Editor, The International Journal of Industrial Organization, 1991 - 1995
Editorial Board, Intellectual Property Fraud Reporter, 1990 - 1995
Consultant on Merger Guidelines to the U.S. Department of Justice, 1991 - 1992
Member, Advisory Committee to the Bureau of the Census, 1987 - 1990
National Bureau of Economic Research, Research Associate
Member, American Economic Association, Econometrics Society

BOOKS

Market Behavior Under Uncertainty, Ph.D. Thesis, Massachusetts Institute of Technology (September 1975); Garland Publishing (1984).

Modern Industrial Organization, Scott, Foresman & Co., co-authored with Jeffrey Perloff, first edition (1990), (Chapter 17 of first edition reprinted as "The Economics of Information" for the University of Connecticut, Food Marketing Policy Center (1989)), second edition (1994), translated into Chinese, French, Hungarian and Italian; Addison Wesley Longman, third edition (2000), fourth edition (2005), translated into Chinese (2009).

RESEARCH PAPERS

"The Equilibrium Analysis of Alternative Housing Allowance Payments," (with Joseph Ferreira) Chapter 6 of Analysis of a Direct Housing Allowance Program, The Joint Center for Urban Studies of M.I.T. and Harvard University, (July 1975).

"Theories of Vertical Integration," presented at Fourth Annual Telecommunications Conference. Appears in a volume of Proceedings of the Fourth Annual Telecommunications Conference, Office of Telecommunications Policy, (April 1976).

"Uncertainty, Production Lags, and Pricing," American Economic Review, (February 1977).

"Selecting Subsidy Strategies for Housing Allowance Programs," (with Joseph Ferreira) Journal of Urban Economics, (July 1977).

"Peak Load Pricing With Stochastic Demand," American Economic Review, (December 1977). (Reprinted in Economic Regulation edited by P.L. Joskow, Edward Elgar Publishing Limited, 1998 and Reprinted in The Economics of Public Utilities edited by Ray Rees, Professor of Economics at the University of Munich, Germany, 2005.)

"The Distribution of Permanent Income," (With R. Hall) Income Distribution and Economic Inequality, edited by Zvi Griliches, et al. (Halsted Press, 1978).

"Vertical Integration--An Overview," in Congressional Record Hearings on the Communications Act of 1978. Bill H.R. 13105, (August 3, 1978).

"Market Behavior with Demand Uncertainty and Price Inflexibility," American Economic Review, (September 1978).

"Vertical Integration in Competitive Markets Under Uncertainty," Journal of Industrial Economics, (March 1979). Awarded the P.W.S. Memorial Prize for the best essay in the field of Industrial Organization by a scholar under the age of thirty.

"Valuing Market Benefits and Costs in Related Output and Input Markets," American Economic Review, (September 1979).

"Contracts, Price Rigidity and Market Equilibrium," Journal of Political Economy, (October 1979).

"Why New Firms Locate Where They Do: An Econometric Model," in Studies in Regional Economics, edited by W. Wheaton, (Urban Institute, 1980).

- "Benefits and Costs of Airline Mergers: A Case Study," (with W. Landes and R. Posner) Bell Journal of Economics, (Spring 1980). (Reprinted in "Air Transport" in Classics In Transport Analysis series, edited by Kenneth Button and Peter Nijkamp, 2001.)
- "The Limitations of Pigouvian Taxes as a Long Run Remedy for Externalities," (with G. Loury) Quarterly Journal of Economics, (November 1980).
- "The Law and Economics of Rights in Valuable Information: A Comment," Journal of Legal Studies, (December 1980).
- "Price Discrimination: Vertical Integration and Divestiture in Natural Resources Markets," (with J. Perloff) Resources and Energy, (March 1981).
- "The Spatial Effects of a Tax on Housing and Land," Regional Science and Urban Economics, (November 1981).
- "Comments on Weicher," The Journal of Law and Economics, (December 1981).
- Comment, in Sherwin Rosen ed. Studies in Labor Markets, University of Chicago Press, (1981).
- "Planning and Market Structure," in The Economics of Information and Uncertainty, edited by J.J. McCall, University of Chicago Press, (1982).
- "The Disruptive Effect of Inflation on the Organization of Markets," in Robert Hall, ed. The Economics of Inflation, University of Chicago Press, (1982).
- "The Need for Coordination Among Firms With Special Reference to Network Industries," (with J. M. Klammer) University of Chicago Law Review, (Spring 1983).
- "A Reexamination of Delivered Pricing," The Journal of Law and Economics, (April 1983).
- "Futures Trading, Market Interrelationships, and Industry Structure," American Journal of Agricultural Economics, (May 1983).
- "The Regulation of Insider Trading," (with D. Fischel), Stanford Law Review, (May 1983), reprinted in J. Macey ed., Classics in Corporate Law and Economics, Edward Elgar Publishing (2008), reprinted in part in Roberto Romano, Foundations of Corporate Law, Oxford University Press (1993), and Corporate Law Series – Insider Trading, Edward Elgar Publishing (2012).
- "The Location and Employment Choices of New Firms: An Econometric Model with Discrete and Continuous Endogenous Variables," The Review of Economics and Statistics, (August 1983).
- "Economic Goals and Remedies of the AT&T Modified Final Judgment," (with W. Lavey), Georgetown Law Review, (August 1983).
- "Equilibrium Fluctuations When Price and Delivery Lags Clear the Market," Bell Journal of Economics, (Autumn 1983).
- "Energy and Location," Energy Costs, Urban Development, and Housing, Brookings Institution, (1984).
- "Futures Markets: Their Purpose, Their History, Their Growth, Their Successes and Failures," Journal of Futures Markets, (September 1984). (Reprinted in Futures Markets edited by A.G. Malliaris and W.F. Mullady, Edward Elgar Publishing Limited, 1995; and in Classic Futures: Lessons from the Past for the Electronics Age, edited by Lester Telser, Risk Books, 2000.)

- "The Economics of Gray-Market Imports," (with C. DeMuth), written for the Coalition to Preserve the Integrity of American Trademarks (COPIAT), (May 1985).
- "The Limitation of Pigouvian Taxes As A Long Run Remedy for Externalities: Extension of Results," (with G. Loury) Quarterly Journal of Economics, (August 1986).
- "The Rigidity of Prices," American Economic Review, (September 1986).
- "The Theory and The Facts of How Markets Clear: Is Industrial Organization Valuable for Understanding Macroeconomics?" in Handbook of Industrial Organization, eds. Schmalensee and Willig, (1989).
- "Market Power and Mergers in Durable-Good Industries," (with R. Gertner), The Journal of Law and Economics, (October 1989).
- "Comments on Vertical Integration and Market Foreclosure," Brookings Papers on Economic Activity: Microeconomics, (1990).
- Book Review of Tirole's "The Theory of Industrial Organization", Journal of Political Economy, (June 1990).
- "The Genesis of Inflation and the Costs of Disinflation: Comment," Journal of Money, Credit & Banking, (August 1991, Part 2).
- "The Theory of Allocation and its Implications for Marketing and Industrial Structure: Why Rationing is Efficient," The Journal of Law and Economics, (October 1991).
- "The Economics of Cooperation and Competition in Electronic Services Network Industries," in Economics of Electronic Service Networks, Wildman Steven ed., Praeger Press, (1992).
- "Merger Policy and Market Definition Under the EC Merger Regulation," (with W. D. Bishop). Conference on Antitrust in a Global Economy, Fordham Corporate Law Institute, (1994).
- "The Antitrust Economics of Credit Card Networks," (with A. Frankel) Antitrust Law Journal, (Winter 1995).
- "Economic Organization and Conflict," Journal of Institutional and Theoretical Economics, (March 1995).
- "Antitrust and Higher Education: Was There a Conspiracy to Restrict Financial Aid?" (with G. Bamberger and R. Epstein) The Rand Journal of Economics, (Vol. 26, No. 1, Spring 1995, pp. 131-147).
- "The Competitive Effects of Line-of-business Restrictions in Telecommunications," (with K. Arrow and H. Sider), Managerial and Decision Economics, (Vol. 16, pp. 301-321, 1995). (Reprinted in Deregulating Telecommunications - The Baby Bells Case for Competition, edited by Richard S. Higgins and Paul H. Rubin, John Wiley & Sons Ltd., 1995.)
- "The Antitrust Economics of Credit Card Networks: Reply to Evans and Schmalensee," (with A. Frankel), Antitrust Law Journal, (Spring 1995).
- "Antitrust and Payment Technologies," (with A. Frankel), Review, Federal Reserve Bank of St. Louis (November/December 1995).
- "Antitrust Policy Toward Mergers When Firms Innovate: Should Antitrust Recognize the Doctrine of Innovation Markets?" Testimony before the Federal Trade Commission Hearings on Global and Innovation-based Competition (October 1995).

- "You Keep on Knocking But You Can't Come In: Evaluating Restrictions on Access to Input Joint Ventures," (with S. Salop), Harvard Journal of Law & Technology, (Volume 9, Summer, 1996). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)
- "Comments on Causes and Consequences of Airline Fare Wars," Brookings Papers on Economic Activity: Microeconomics, (1996).
- "A Critical Assessment of the Role of Imperfect Competition in Macroeconomics," in Market Behavior and Macro Economic Modeling, Brakman, Van Ees, & Kuipers (eds.), MacMillan Press (1997).
- "Price Rigidity," Business Cycles and Depressions, David Glasner ed., Garland Publishing, Inc., (1997).
- "Communication Among Competitors: Game Theory and Antitrust," (with R. Gertner and A. Rosenfield), George Mason Law Review, (1997). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)
- "Comments on Born and Viscusi," Brookings Papers on Economic Activity: Microeconomics, (1998).
- "Antitrust and Higher Education: MIT Financial Aid (1993)," (with G. Bamberger), The Antitrust Revolution, in eds. J. Kwoka and L. White, (Oxford University Press, 3rd edition 1999).
- "Market Power and Vertical Restraints in Retailing: An Analysis of FTC v. Toys 'R' Us," (with H. Sider), The Role of the Academic Economist in Litigation Support, edited by Daniel Slottje, North Holland, (1999).
- "The Economics of Religion, Jewish Survival and Jewish Attitudes Toward Competition on Torah Education," (with A. Weiss), Journal of Legal Studies, (2001). (Reprinted in Essential Readings on Jewish Identities, Lifestyles and Beliefs, edited by Stanford M. Lyman, Gordian Knot Books, 2003).
- "A General Analysis of Exclusionary Conduct and Refusal to Deal -- Why Aspen and Kodak are Misguided," Antitrust Law Journal, (2001). (Reprinted in e-Commerce Antitrust & Trade Practices, Practising Law Institute, 2001.)
- "The Lessons from Microsoft," Business Economics, (January 2001).
- "Lessons from Halacha About Competition and Teaching," (with A. Weiss), Center for Business Ethics Social Responsibility, <http://besr.org/library/competition.html>, (March 2001).
- "The Choice of Organizational Form in Gasoline Retailing and The Costs of Laws Limiting that Choice," (with A. Blass), The Journal of Law and Economics, (October 2001). Reprinted in Franchise Contracting and Organization, edited by Francine Lafontaine, Elgar Publishing, (2005).
- "Should The Merger Guidelines Be Scrapped? Introduction to a Debate," in Symposium On The Antitrust Analysis Of Mergers: Merger Guidelines vs. Five Forces, 33 U. WEST L.A. L. REV. (2001).
- "Free Riding and Sales Strategies for the Internet," (with J. Chevalier), The Journal of Industrial Economics, (December 2001).
- "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," (with M. Waldman), The Rand Journal (Vol. 33, No. 2, Summer 2002). (Reprinted in B. Klein and A. Lerner eds. Economics of Antitrust Law, Edward Elgar Publishing Ltd, 2008, and Recent Developments in Monopoly and Competition Policy, The International Library of Critical Writings in Economics, edited by George Norman, Edward Elgar Publishing Ltd, 2008.)

- "The Competitive Effects of Fannie Mae," (with D. Gross and R. Stillman) in Housing Matters: Issues in American Housing Policy, Fannie Mae (January 2002, reprinted 2004).
- "Intellectual Property, Antitrust and Strategic Behavior," (with R. Gertner), in eds. Adam Jaffee and Joshua Lerner, Innovation Policy and the Economy, Volume 3, MIT Press (2003).
- "Airline Networks and Fares," (with G. Bamberger), Handbook of Airline Economics, 2nd ed., Darryl Jenkins, ed., McGraw Hill (2003).
- "Contracts that Lessen Competition -- What is Section 27 for, and How Has it Been Used?" (with David Goddard), in Mark N. Berry and Lewis T. Evans eds., Competition Law at the Turn of the Century: A New Zealand Perspective, Victoria University Press (2003).
- Interview, Economists' Roundtable, Antitrust Magazine, (Spring 2003).
- "The Relevance for Antitrust Policy of Theoretical and Empirical Advances in Industrial Organization," (Fall 2003), George Mason Law Review.
- "The Control of Externalities in Sports Leagues: An Analysis of Restrictions in the National Hockey League," (with A. Frankel and E. Landes), Journal of Political Economy, (February 2004), reprinted in Recent Developments in the Economics of Sport, edited by W. Andreff (2011).
- "An Empirical Investigation of the Competitive Effects of Domestic Airline Alliances," (with G. Bamberger and L. Neumann), The Journal of Law and Economics, Vol. 47, No. 1, (April 2004, pp. 195-222).
- "Why Barriers to Entry are Barriers to Understanding," American Economic Review, (May 2004).
- "Using Economics to Improve Antitrust Policy," Milton Handler Lecture, Columbia Business Law Review, (June 2004).
- "The Proper Role for Antitrust in an International Setting," (Keynote address: Second Annual Conference of the International Competition Network (ICN), Merida City, Mexico (June 25, 2003), appears as Appendix to "Using Economics to Improve Antitrust Policy", Columbia Business Law Review (June 2004).
- "Econometric Analysis of Telephone Mergers," (with H. Sider) pp. 373-395 in American Bar Association, Econometrics: Legal, Practical, and Technical Issues, (2005).
- "How Economics Can Improve Antitrust Doctrine Towards Tie-in Sales," (with M. Waldman), Competition Policy International, (Spring 2005).
- Preface to: "Law and Economics of the Mexican Competition Laws," by Francisco Gonzalez de Cossio (2005).
- "Transaction Costs, Externalities and "Two-Sided" Payment Markets," (with A. Frankel), Columbia Business Law Review, No. 3 (2005).
- "Predation and the Entry and Exit of Low-Fare Carriers," (with G. Bamberger), in Advances in Airline Economics: Competition Policy and Antitrust, Darin Lee, ed., (2006).
- "Why Tie An Essential Good," (with Michael Waldman), in Hahn R. ed., Antitrust Policy and Vertical Restraints, AEI-Brookings, (July 2006).
- "Market Definition: Use and Abuse," Competition Policy International (Spring 2007)

Interview with Deputy Assistant Attorney General, The Antitrust Source (February 2007)

Separate Statement of Dennis W. Carlton, in The Report of the Antitrust Modernization Commission, (April 2007)

"Does Antitrust Need to be Modernized?," Journal of Economic Perspectives (Summer 2007)

"The Year in Review: Economics at the Antitrust Division 2006-2007" (with K. Heyer), Review of Industrial Organization, (2007).

"Economic Analysis of Competition Practices in the EU and the U.S.: A View from Chief Economists," (with M. Salinger), Competition Policy International (Autumn 2007).

"Merger Analysis," Palgrave Dictionary, (with J. M. Perloff), (2008).

"Tying," (with M. Waldman), in W. Collins ed. Issues in Competition Law and Policy, American Bar Association, (2008).

"Barriers to Entry," in W. Collins ed. Issues in Competition Law and Policy, American Bar Association, (2008).

"Product Variety and Demand Uncertainty: Why Mark-ups Vary with Quality," (with James D. Dana Jr.), Journal of Industrial Economics (2008)

"Regulation, Antitrust, and Trinko," (With H. Sider), in eds. J. Kwoka and L. White, The Antitrust Revolution, (2008).

"A Solution to Airport Delays," (with W. Whalen, K. Heyer and O. Richard), Regulation (2008).

"Should 'Price Squeeze' Be A Recognized Form of Anticompetitive Conduct?," Journal of Competition Law & Economics (2008).

"Safe Harbors for Quantity Discounts and Bundling," (with M. Waldman), George Mason Law Review (2008).

"Appropriate Antitrust Policy Towards Single-Firm Conduct: Extraction vs. Extension" (with K. Heyer), Antitrust, (condensed version of subsequent paper), (Summer 2008).

"Extraction vs. Extension: the Basis for Formulating Antitrust Policy Towards Single-Firm Conduct" (with K. Heyer), Competition Policy International, (Autumn 2008).

"Assessing the Anticompetitive Effects of Multiproduct Pricing," (with P. Greenlee and M. Waldman), Antitrust Bulletin, (Fall, 2008).

"The Need to Measure the Effect of Merger Policy and How to Do It," Antitrust, (condensed version of subsequent paper), (Summer 2008).

"How to Measure The Effectiveness of US Merger Policy," <http://voxeu.org/index.php?q=node/3344>, (2009), and a slightly revised version appears as "Measuring the Effectiveness of US Merger Policy" in The Economists' Voice: Vol. 6: Iss. 7, Article 2, (2009). These are condensed versions of the subsequent paper.

"Why We Need to Measure the Effect of Merger Policy and How to Do It," Competition Policy International (Spring 2009).

"Competition, Monopoly, and Aftermarkets," (with M. Waldman), Journal of Law, Economics and Organization, (April 2009).

"Competition Policy: Beware of Using It to Harm Competition," Fair Trade, Japan, (Spring 2009).

"Should Competition Policy Prohibit Price Discrimination?" (with M. Israel), Global Competition Review, (2009).

"Merger Guidelines Revisited?" an interview, Antitrust, American Bar Association, (Fall 2009).

"How Should Economic Evidence be Presented and Evaluated," proceedings of the EU Competition Workshop, Florence, Italy, (June 2009).

"Externalities in Payment Card Networks: Theory and Evidence: A Commentary," The Changing Retail Payments Landscape: What Role for Central Banks?, Federal Reserve Bank of Kansas City (2010).

"Why Tie a Product Consumers Do Not Use?," (with J. Gans and M. Waldman), Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the International Industrial Organization Society for Best Paper in Antitrust Economics, (2008), American Economic Journal: Microeconomics (2010).

"Mergers in Regulated Industries: Electricity," in Competition Law and Economics: Advances in Competition Policy Enforcement in the EU and North America, A. Mateus and T. Moreira editors, (2010).

"Financial Issues (Comments on Bankruptcy and Clearing Houses)," Chapter X in Competition as Public Policy, American Bar Association, (2010).

"Revising the Horizontal Merger Guidelines," Journal of Competition Law & Economics (2010), also appears in Journal of Competition Law – CADE (Brazil) Vol. 1, No. 23 (2011), also appears in Revista de Direito da Concorrência, Conselho Administrativo de Defesa Econômica, (Brazilian Government Publication), translated into Portuguese by T. Aranovich, p. 83-114 (2011).

"Net Neutrality and Consumer Welfare," (with G. Becker and H. Sider), Journal of Competition Law & Economics, (2010).

"Will The New Guidelines Clarify or Obscure Antitrust Policy?," (with M. Israel), The Antitrust Source, (2010).

"Introduction to Stigler's Theory of Oligopoly," (with S. Peltzman), Competition Policy International, (2010).

"Response to Gopal Das Varma's Market Definition, Upward Pricing Pressure, and the Role of Courts: A Response to Carlton and Israel," (with M. Israel), The Antitrust Source, (2010).

"Use and Misuse of Empirical Methods in the Economics of Antitrust," 3(1) Competition Policy International Antitrust Chronicle, (2011).

"The Economics of Patent Ambush," Concurrences, New Frontiers of Antitrust, (2011).

"Proper Treatment of Buyer Power in Merger Review," (with M. Israel), Review of Industrial Organization, (2011).

"Upgrades, Switching Costs, and the Leverage Theory of Tying," (with M. Waldman), Economic Journal, (2012).

- "Brantley Versus NBC Universal: Where's the Beef?," (with M. Waldman), Competition Policy International, (2012).
- "An Economic Interpretation of FRAND," (with A. Shampine), Journal of Competition Law & Economics, (2013)
- "Economists' Roundtable on Hot Patent-Related Antitrust Issues," Antitrust Magazine, Vol. 27, No. 3, (Summer 2013).
- "Identifying Benchmarks for Applying Non-Discrimination in FRAND," (with A. Shampine), Competition Policy International, CPI Antitrust Chronicle, (August 2014).
- "Patent Litigation, Standard Setting Organizations, Antitrust and FRAND," (with A. Shampine), University of Texas Intellectual Property Law Journal, (2014).
- "Antitrust and Regulation," (with R. Picker) in N. Rose ed., Economic Regulation and Its Reform: What Have We Learned?, NBER, (2014).
- "Competition Policy and Regulation in Credit Card Markets: Insights from Single-sided Market Analysis," (with R. Winter), Competition Policy International, (2014).
- "Robert Bork's Contributions to Antitrust Perspectives on Tying Behavior," (with M. Waldman), The Journal of Law and Economics, (2014).
- "Buyer Power in Merger Review," (with M. Coleman and M. Israel), Oxford Handbook of International Antitrust Economics, eds. R. Blair and D. Sokol (2015).
- "Antitrust, Transaction Costs and Merger Simulation with Non-linear Pricing," (with B. Keating), The Journal of Law and Economics, (2015).
- "Rethinking antitrust in the presence of transaction costs: Coasian Implications," (with B. Keating), Review of Industrial Organization, (2015), Best Academic Economics Article in Antitrust - 2016 Antitrust Writing Awards, given by Concurrences and George Washington University Law School.
- "Does The FTC's Theory of Product-Hopping Promote Competition?," (with F. Flyer and Y. Shefi) Journal of Competition Law and Economics, (2016)
- "Price Discrimination," published on OECD website, (November 2016) ([https://one.oecd.org/document/DAF/COMP/WD\(2016\)82/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2016)82/en/pdf))
- "Hopes for Antitrust Policy Under the Trump Administration," The Antitrust Source, ABA Antitrust Law Section (2017).
- "Penalties for collusion: Can there be an overlap between fines and damages? Balancing criminal and civil penalties domestically and internationally", Concurrences, Competition Law Review, No.1-17 (2017)
- "Antitrust Conversations with some of the world's most distinguished experts", Revue Concurrentialiste, (2017)
- "Eugene Fama and Industrial Organization," The Fama Portfolio, edited by John Cochrane and Tobias Moskowitz, University of Chicago Press, (2018), slightly revised version appears as "How Eugene F. Fama has left his mark on industrial organization", in the Chicago Booth Review, (May 10, 2017).

- "Roundtable with Economists: Discussing Practice and Theory with the Experts", Antitrust Magazine, Vol. 32, No. 2, (Spring 2018).
- "Vertical Most-Favored-Nation Restraints and Credit Card No-Surcharge Rules," (with R. Winter), The Journal of Law and Economics, (2018), Best Academic Economics Article in Antitrust - 2019 Antitrust Writing Awards, given by Concurrences and George Washington University Law School.
- "Are Legacy Airline Mergers Pro- or Anti-Competitive? Evidence from Recent U.S. Airline Mergers," (with M. Israel, I. MacSwain and E. Orlov), International Journal of Industrial Organization, (2019).
- "The Anticompetitive Effects of Vertical Most-Favored-Nation Restraints and the Error of Amex," Columbia Business Law Review, (2019).
- "Lessons from AT&T/Time Warner," (with M. Israel and A. Shampine), CPI Antitrust Chronicle, (July 2019).
- "Antitrust Treatment of Nonprofits: Should Hospitals Receive Special Care?" (with C. Capps and G. David), Economic Inquiry, (March 2020). 2020 Award for Best Article in Economic Inquiry.
- "Some Observations on Claims that Rising Market Power is Responsible for the US Economy Ills and that Lax Antitrust is the Villain," CPI Antitrust Chronicle, (August 2020).
- "The Revolution in Antitrust: An Assessment," (with K. Heyer), Antitrust Bulletin, (2020).
- "Transaction Costs and Competition Policy," International Journal of Industrial Organization, (2020).
- "Effects of the 2010 Horizontal Merger Guidelines on Merger Review: Based on Ten Years of Practical Experience," (with M. Israel), Review of Industrial Organization, (November 2020).
- "Is Consumer Welfare in Hot Water?," Antitrust Magazine, (Summer 2022).
- "Understanding Basic Principles and Facts about Antitrust to Create a Basis for Some (Any?) Consensus?" CPI Antitrust Chronicle, (August 2022).
- "How to Make Sensible Merger Policies?," Network Law Review, (September 14, 2022).
- "Introduction" A Special Issue in Honor of Sam Peltzman, The Journal of Law and Economics, Vol. 65, No. S2, (November 2022).
- "A Retrospective Analysis of the AT&T/Time Warner Merger," (with G. Giosov, M. Israel, and A. Shampine), The Journal of Law and Economics, (November 2022).
- "The Economics of the LCD Cartel: Organization, Incentives, and Practical Challenges," (w. M. Israel, I. MacSwain and A. Shampine), Joseph Harrington & Maarten Pieter, eds., Cartels Diagnosed: New Insight on Collusion, (Forthcoming).
- "Errors in Antitrust Enforcement Matter More than You Think," George Mason Law Review, (Forthcoming).

UNPUBLISHED PAPERS

"Modeling the Housing Allowance Program," M.A. Thesis, Massachusetts Institute of Technology (September 1974).

"The Cost of Eliminating a Futures Market and The Effect of Inflation on Market Interrelationships," (1984).

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